Study Suggestions for Exam 1 - Bio 112

This exam will cover Chapters 1, 24, 26 and 32 and labs Porifera, Cnideria, Platyhelmethes and the Chocolate Phylogentics lab. About 70% of the exam is on the lecture and 30% is from the Lab sessions. This guide will help you focus your studies. Hopefully you have been studying since the first lecture!

Lab questions:

Review all of your lab questions; expect to see some diagrams from lab and some questions directly from our lab book. Check your returned papers to be sure that you got the questions correct!

> ***For each Phylum that we detailed in class, know the traits that make it unique (ie for sponges: no tissues, no symmetry, no coelum and no organs.) Best way to do this is flash cards. This will reappear on the next guide***

What kind of symmetry does each Phylum have?
Do you remember what protist group animals stem from, what unites us with the group?
Protosomes and Deuterosomes - what are differences?
Eumetazoa and Bilatera what are they? What defines the members?

Phylum Porifera: -
- How do they eat? How does the water current move through them?
- Label the pores, choanocytes, osculum, and amebocyte on a picture.
- Why are they basal, but still animals.
- How do they reproduce? (3 methods)

Phylum Cnidaria: -
- How do they eat?
- Label the mouth/anus, tentacles, hypostoma, cnidocytes, and on a picture.
- Can you explain the sexual vs. asexual stages in the generalized cnidarian that we looked at?

Phylum Platyhelmenthes: -
- How do they eat? Which are parasitic and which are free living?
- How does a tapeworm get nutrients? Label its parts
- Can you label the major parts of the Planaria?

Chapter 1 - Introduction to Biology - Review

- What are some of the themes in biology? What is the main theme?
- What is the smallest unit of life.
- What are the 3 domains, and what domain are we in?

Chapter 24 - The Origin of Species

Define a species - using the biological species concept

What are the 6 types of prezygotic barriers that cause speciation?

How does each of them keep two animals from breeding? Examples?

What are the three types of postzygotic barriers cause speciation? Examples?

What is hybrid sterility?

Define and know the difference between allopatric and sympatric speciation. Give examples.

What are some mechanisms for sympatric speciation?

What is punctuated equilibrium and how does it compare to Darwin's model of evolution?

What is a species? How do we define it? What are some problems with the biological definition (think fossils and asexual). What is the advantage of working with other definitions? If I give you a list of species definitions, could you tell me why each one is good and bad? Why do we have so many definitions?

Chapter 26 - Investigating the Tree of Life

What are the levels of Linneaeus' system?

If I give you a (very short) table of characteristics be able to create a claddistic hypothesis (like in chocolate lab.)

Define taxonomy, convergent, homoplasy, homology, claddistics, clade, paraphyletic, monophyletic, polyphyletic, analogy and all of the words from our lab.

Why is parsimony important in creating a tree?

Why do we need an outgroup?

What is the difference between shared ancestral and shared derived characters?

What is horizontal gene transfer and how does it affect the tree of life?

What is a clade? A phylogenetic hypothesis? Why are they only hypotheses?

Chapter 32 - Animal Diversity

What is the endosymbiotic theory of the origin of eukaryotic cells? How does it explain eukaryote diversity?

What kind of creature do we think all animals evolved from?

What are the characteristics of animals?

What kind of coelum does each group have, and what is a coelum anyway?

What is an "explosion" when it refers to changes in species abundance (Cambrian Explosion)

What is the difference between a diploblastic and triploblastic organism?

When did animals first show up in the fossil record? When did dinosours, how about mammals?

Why do some animals alternate sexual and asexual generations? What is the advantage of having both, one or the other?